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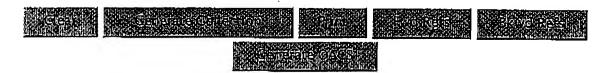
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□ 1. Document ID: WO 9624198 A1

L3: Entry 1 of 2

File: EPAB

Aug 8, 1996

PUB-NO: WO009624198A1

DOCUMENT-IDENTIFIER: WO 9624198 A1

TITLE: SPECTRUM SPREADING COMMUNICATION DEVICE AND COMMUNICATION SYSTEM

PUBN-DATE: August 8, 1996

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INVENTOR-INFORMATION:

NAME	COUNTRY
SHIBA, TAKASHI	JP
YUHARA, AKITSUNA	JP
YAMADA, YOSHIHIRO	JP
OTA, YASUHIRO	JP

ASSIGNEE-INFORMATION:

NAME		COUNTRY
HITACHI LTD SHIBA TAKASHI		JP JP
YUHARA AKITSUNA		JP
YAMADA YOSHIHIRO		JP
OTA YASUHIRO	· .	JР

APPL-NO: JP09500129

APPL-DATE: February 1, 1995

PRIORITY-DATA: JP09500129W (February 1, 1995)

INT-CL (IPC): HO4 B 1/69

EUR-CL (EPC): H04B001/707; H04J013/00

ABSTRACT:

CHG DATE=19990617 STATUS=O>A structure of a novel spectrum spreading communication device which solves the problem with the conventional spectrum spreading

communication using Barker codes, etc., and limits the rise of the side-lobe of a correlational signal independently of the order of information codes by use of a code sequence having a code length of at least 14. The spectrum spreading communication device uses a pseudo-noise code having a code length of at least 14 and a self-correlation side-lobe of not greater than 3 as a pseudo-noise code of a direct spreading communication device which uses the pseudo-noise codes whose polarities are inverted so as to deal with also digital information. Thus, even when the pseudo-noise code length is 14 or more, the side-lobe of the correlation coefficient can be restricted. Accordingly, the error rate of the spectrum spreading communication device is reduced and the processing gain is improved.

Full Title Citation Front Review Classification Date Reference Section Front Review Claims Mill Draw De

Document ID: WO 9624198 A1 , US 6134264 A, JP 08523396 X

L3: Entry 2 of 2

File: DWPI

Aug 8, 1996

DERWENT-ACC-NO: 1996-371703

DERWENT-WEEK: 200054

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TITLE: Spread spectrum communication system - uses pseudo-noise code having length greater than 14, pref. odd number, and auto-correlation side lobe below 3,

INVENTOR: OTA, Y; SHIBA, T; YAMADA, Y; YUHARA, A; OHTA, Y

PATENT-ASSIGNEE:

ASSIGNEE CODE HITACHI LTD HITA

PRIORITY-DATA: 1995WO-JP00129 (February 1, 1995)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9624198 A1	August 8, 1996	J	079	H04B001/69
US 6134264 A	October 17, 2000		000	H04K001/00
JP <u>08523396 X</u>	February 24, 1998		000	H04B001/69

DESIGNATED-STATES: CN JP KR US AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

CITED-DOCUMENTS: 2. Jnl. Ref; JP 03174835

APPLICATION-DATA:

PUB-NO APPL-DATE APPL-NO DESCRIPTOR WO 9624198A1 February 1, 1995 1995WO-JP00129 US 6134264A February 1, 1995 1995WO-JP00129 US 6134264A WO 9624198 Based on JP 08523396X February 1, 1995 1995WO-JP00129 JP 08523396X February 1, 1995 1996JP-0523396 JP 08523396X

WO 9624198

Based on

INT-CL (IPC): HO4 B 1/69; HO4 K 1/00

ABSTRACTED-PUB-NO: US 6134264A BASIC-ABSTRACT:

The system uses a code sequence of pseudo noise with inverted polarities and having a code length of more than 14, and an autocorrelation side-lobe of less than 3 for direct spreading communication. The pseudo noise code is pref. an odd number, e.g. 15, 21, 25 or 27. A filter function is used to reduce the side lobes of the output matching signal obtained after demodulation.

A matched filter is used as a demodulating element. Each tap of the matched filter is weighted. The filter may be a surface acoustic wave filter without polarity inverting electrodes.

ADVANTAGE - Solves problem with conventional spread spectrum communication using Barker codes, etc., and limits rise of side-lobe of correlational signal independently of order of information code error rate. Processing gain is improved.

ABSTRACTED-PUB-NO:

WO 9624198A EQUIVALENT-ABSTRACTS:

The system uses a code sequence of pseudo noise with inverted polarities and having a code length of more than 14, and an autocorrelation side-lobe of less than 3 for direct spreading communication. The pseudo noise code is pref an odd number, e.g. 15, 21, 25 or 27. A filter function is used to reduce the side lobes of the output matching signal obtained after demodulation.

A matched filter is used as a demodulating element. Each tap of the matched filter is weighted. The filter may be a surface acoustic wave filter without polarity inverting electrodes.

ADVANTAGE - Solves problem with conventional spread spectrum communication using Barker codes, etc., and limits rise of side-lobe of correlational signal independently of order of information code error rate. Processing gain is improved.

CHOSEN-DRAWING: Dwg.1/22

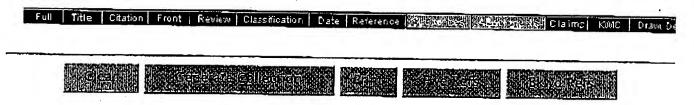
TITLE-TERMS: SPREAD SPECTRUM COMMUNICATE SYSTEM PSEUDO NOISE CODE LENGTH GREATER PREFER ODD NUMBER AUTO CORRELATE SIDE LOBE BELOW

DERWENT-CLASS: WOZ

EPI-CODES: W02-C03; W02-G02; W02-K05B1; W02-K05B3; W02-K05B5;

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1/39/1
DIALOG(R) File 345: Inpadoc/Fam. & Legal Stat
(c) 2004 EPO. All rts. reserv.
Basic Patent (No, Kind, Date): WO 9624198 A1 19960808 < No. of Patents: 002>
Patent Family:
    Patent No
                Kind Date
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                                            Kind Date
                                                       19970721
                      20001017
                                   US 875182
                                                  Α
    US 6134264
                   Α
                   A1 19960808
                                   WO 95JP129
                                                  Α
                                                       19950201 (BASIC)
   WO 9624198
Priority Data (No, Kind, Date):
   WO 95JP129 A 19950201
PATENT FAMILY:
UNITED STATES OF AMERICA (US)
  Patent (No, Kind, Date): US 6134264 A 20001017
    SPREAD SPECTRUM COMMUNICATION DEVICE AND COMMUNICATION SYSTEM (English)
    Patent Assignee: HITACHI LTD (JP)
   Author (Inventor): SHIBA TAKASHI (JP); YUHARA AKITSUNA (JP); YAMADA
      YOSHIHIRO (JP); OHTA YASUHIRO (JP)
    Priority (No, Kind, Date): WO 95JP129 A
                                             19950201
   Applic (No, Kind, Date): US 875182 A 19970721
   National Class: * 375150000; 375151000; 375152000; 375153000
    IPC: * H04K-001/00
    Derwent WPI Acc No: * G 96-371703
    Language of Document: English
UNITED STATES OF AMERICA (US)
  Legal Status (No, Type, Date, Code, Text):
                       19970721 US REFW
                                               CORRESPONDS TO PCT
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                             APPLICATION (ENTSPRICHT PCT ANMELDUNG)
                             WO 9624198 P
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                                              PRIORITY (PATENT)
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                                              APPLICATION DATA (PATENT)
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WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)
  Patent (No, Kind, Date): WO 9624198 Al 19960808
    SPECTRUM SPREADING COMMUNICATION DEVICE AND COMMUNICATION SYSTEM
      (English)
    Patent Assignee: HITACHI LTD (JP); SHIBA TAKASHI
                                                      (JP); YUHARA
                                                          (JP)
     AKITSUNA (JP); YAMADA YOSHIHIRO (JP); OTA YASUHIRO
   Author (Inventor): SHIBA TAKASHI (JP); YUHARA AKITSUNA (JP); YAMADA
      YOSHIHIRO (JP); OTA YASUHIRO (JP)
    Priority (No, Kind, Date): WO 95JP129 A
                                             19950201
   Applic (No, Kind, Date): WO 95JP129 A 19950201
    Designated States: (National) CN; JP; KR; US
                                                   (Regional) AT; BE; CH;
      DE; DK; ES; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE
    Filing Details: WO 100000 With international search report
          H04B-001/69
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    Language of Document: Japanese
WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)
  Legal Status (No, Type, Date, Code, Text):
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    WO 9624198
                             DATA)
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Search

			WO 95JP129 A 19950201
WO	9624198	Ρ	19960808 WO AK DESIGNATED STATES CITED IN A
			PUBLISHED APPLICATION WITH SEARCH REPORT
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			WITH SEARCH REPORT)
			CN JP KR US
WO	9624198	P	19960808 WO AL DESIGNATED COUNTRIES FOR
			REGIONAL PATENTS CITED IN A PUBLISHED
			APPLICATION WITH SEARCH REPORT (DESIGNATED
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			PUBLISHED APPL. WITH SEARCH REPORT)
			AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT
			SE
WO	9624198	P	19960808 WO A1 PUBLICATION OF THE
			INTERNATIONAL APPLICATION WITH THE
			INTERNATIONAL SEARCH REPORT (PUB. OF THE
			INTERNATIONAL APPL. WITH THE INTERNATIONAL
		_	SEARCH REPORT)
WO	9624198	P	19960906 WO DFPE REQUEST FOR PRELIMINARY
			EXAMINATION FILED PRIOR TO EXPIRATION OF 19TH
***	0.604100	n	MONTH FROM PRIORITY DATE
WO	9624198	Р	19961030 WO 121 EP: PCT APP. ART. 158 (1) (EP: PCT ANM. ART. 158 (1))
T-T-C	9624198	P	19970721 WO ENP ENTRY INTO THE NATIONAL
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MO	9624198	P	19980318 WO 122 EP: PCT APP. NOT ENT. EUROP.
WO	7024170	_	PHASE (EP: PCT ANM. NICHT IN EUROP. PHASE
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MO	9624198	Р	19980708 WO 122 EP: PCT APP. NOT ENT. EUROP.
, 110		-	PHASE (EP: PCT ANM. NICHT IN EUROP. PHASE
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